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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,747	12/13/2001	Tadashi Ishiguro	448564/0042	6237

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EXAMINER

DICUS, TAMRA

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-4

<b>Office Action Summary</b>	Application No. 10/021,747	Applicant(s) TADASHI ISHIGURO	
	Examiner Tamra L. Dicus	Art Unit 1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☒ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
     a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |                                                                                                              |                                                                             |
|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other:                                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Describing a polymer merely by its “short/long” chain and cyclic structure or “polar-containing long chain polyol” is not fully descriptive. The Examiner suggests explicitly naming the polymer used. The Examiner will treat this material as a polyol component. Furthermore, “short” and “long” are relative terms, *especially* when addressing polymers in general terms.
3. Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Describing polyurethane having 3 to 20 OH groups per one molecule does not describe the polymer fully.
4. Claims 1-7 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not defined as to what makes a medium a “cleaning” medium. For purposes of examination,

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the Examiner will regard such a medium as the make-up of the medium, being functionally equivalent.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-2, 4-7 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over USPN 5,489,466 to Inaba et al. and USPN 5,747,157 to Hashimoto et al.

Inaba teaches a magnetic recording medium comprising a nonmagnetic support, a lower nonmagnetic layer (lower coating layer) and an upper magnetic (cleaning) layer. The lower nonmagnetic layer is coated on the support, comprises an inorganic nonmagnetic powder dispersed in a binder, and is surface-coated with an inorganic oxide. The upper magnetic layer has a dry thickness of 1.0 micrometers or less, preferably 0.01 to 0.8  $\mu\text{m}$  (meeting range 0.05 to 1.0  $\mu\text{m}$ ) and comprises a dispersion of a ferromagnetic powder in a binder, same material as

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Applicant includes. The upper magnetic layer is coated onto the lower nonmagnetic layer. The lower nonmagnetic layer has a thickness of 0.5  $\mu\text{m}$  to 10  $\mu\text{m}$ . See col. 1, lines 10-15, col. 3, lines 30-50, col. 4, lines 20-39, col. 21, lines 25-40, and patented claim 1. At col. 28, line 35, Inaba explains the media has a total thickness smaller than 9.5  $\mu\text{m}$ , meeting the range from 4.0 to 15  $\mu\text{m}$ . While Inaba doesn't refer to these layers as cleaning and lower coating layers, the Examiner takes the position that since they are of the same material, they are functional equivalents.

Regarding claim 5, at col. 6, lines 40-50, Inaba teaches polyurethane used in the lower nonmagnetic layer and upper magnetic layer containing at least one polar group selected from the group consisting of --COOM, --OSO<sub>3</sub>M, --SO<sub>3</sub>M, where M, represents a hydrogen atom.

Regarding the --OH groups on polyurethane, Inaba teaches it is well known to use 3 or more --OH groups at col. 3, line 10, using pentaerythritol and trimethylolpropane, which meets claim 6.

Further regarding claim 2, polyol diisocyanates are also included in the binder lower coating at col. 21, lines 42-55 and cyclic structure in Example 4-2. Also note describing the starting materials of polyurethane is a process limitation. Patentability of an article depends on the article itself and not the method used to produce it (see MPEP 2113). Additionally addressing claims 2 and 5-6, Hashimoto teaches a it is well known to provide to a magnetic layer a polyurethane resin that is a reaction product obtained by using a polyol and an organic diisocyanate as main starting materials. Hashimoto further explains the polyurethane resin containing as components of a polyol 15 to 40% by weight of a short -chain diol component having a cyclic structure, and 10 to 50% by weight of a long-chain polyether polyol component,

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and further including a polar group -containing long-chain polyol component having a molecular weight of 500 to 5,000. To improve dispersibility, the urethane resin of Hashimoto contains a polar group. Hashimoto uses a strong polar group selected from the group consisting of  $-\text{SO}_3\text{M}$ ,  $-\text{OSO}_3\text{M}$ ,  $-\text{COOM}$ ,  $-\text{PO}_3\text{M}_2$ ,  $-\text{OPO}_3\text{M}_2$ ,  $-\text{NR}_2$ , and  $\text{R}'\text{COO}^-$  where M is a hydrogen atom, an alkali metal or ammonium, and R and R' each are an alkyl group having 1 to 12 carbon atoms. Hashimoto also teaches it is well known to add 3 to 20  $-\text{OH}$  groups per polyurethane molecule. See col. 3, lines 9-35, and col. 4, lines 40-45. Col. 5, lines 23-26 describe polyurethane having a polar group content from  $1 \times 10^{-5}$  eq/g to  $2 \times 10^{-4}$  eq/g as in claim 4.

Addressing claim 7, that the cleaning layer is formed on the lower coating by a wet-on-wet process while wet is not germane to patentability. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. Patentability of an article depends on the article itself and not the method used to produce it (see MPEP 2113). Furthermore, the invention defined by a product-by-process invention is a product NOT a process. *In re Bridgeford*, 357 F. 2d 679. It is the patentability of the product claimed and NOT of the recited process steps which must be established. *In re Brown*, 459 F. 2d 531. Nevertheless, at col. 27, lines 5-25, Inaba teaches where the lower coating layer is performed by a wet-on-wet coating process while wet.

In Example 3, Inaba teaches adding polyurethane in the range claimed in claim 4.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,489,466 to Inaba et al. in view of USPN 5,530,609 to Koga et al.

Inaba essentially teaches the claimed invention. Inaba teaches fatty acids added to an

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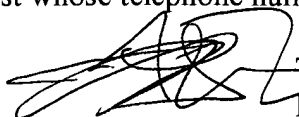
upper layer, but is silent to protrusions existing. Koga teaches a magnetic media using a thin film magnetic. Koga teaches it is known to provide a magnetic field to a coating layer, which is the same way Applicant produces protrusions on the layer. Hence, it would have been obvious to one of ordinary skill in the art to modify the magnetic media of Inaba to provide protrusions of certain degree, since Koga teaches applying magnetic fields is a surface treatment one would provide the same effect at col. 21, lines 30-45.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN 6,030,689 to Matsubaguschi et al., USPN 4,439,795 to Kitamoto et al., USPN 5,254,404 to Hashimoto et al., teach using polyurethane in a magnetic recording medium having polar groups of 3 to 20 -OH groups.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is (703) 305-3809. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8329 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Tamra L. Dicus  
Examiner  
Art Unit 1774

March 10, 2003

CYNTHIA M. KELLY  
SUPERVISOR, ART UNIT EXAMINER  
TECH. CENTER 1774

